

AN EXAMINATION OF GRIT AS A MODERATOR  
OF THE RELATIONSHIP BETWEEN PERCEIVED  
DISCRIMINATION AND SUICIDE IDEATION

By

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AN EXAMINATION OF GRIT AS A MODERATOR OF  
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DISCRIMINATION AND SUICIDE IDEATION

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Abstract: Suicide is the second leading cause of death for young adults ages 15-34; however, suicide rates vary by race and ethnicity. Cultural factors are generally neglected in suicide research. However, perceived discrimination is a key cultural factor that is experienced across ethnic/racial minority members and is related to many negative mental health outcomes, including suicide. The relationship between perceived discrimination and suicide may vary as a function of individual protective characteristics. One such possible resiliency factor against suicide is grit, which is defined as perseverance through obstacles and a passion for long-term goals over time (Duckworth et al., 2007). The aim of the current study was to examine whether grit would significantly buffer the relationship between perceived discrimination and suicide ideation in a community sample of ethnic minority members. It was hypothesized that perceived discrimination would be positively and significantly associated with suicide ideation, and that grit would significantly moderate this association, thus weakening this relationship. Results of the current study partially supported hypotheses. Perceived discrimination (including recent, lifetime, and appraised stressfulness of discrimination) was positively and significantly associated with suicide ideation. Results of regression analyses indicated that grit significantly weakened the relationship between perceived discrimination (recent discrimination) and suicide ideation; however, grit did not significantly moderate the relationships between lifetime discrimination and suicide ideation, or between appraised discrimination and suicide ideation. These findings suggest that ethnic minority individuals who are low in grit and have recently experienced high rates of discrimination may be more susceptible to thoughts of suicide.

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## CHAPTER I

### INTRODUCTION

Suicide is the 2<sup>nd</sup> leading cause of death for young adults ages 15-34 (CDC, 2013); however, this rate varies by race and ethnicity. For example, US suicide epidemiological mortality data indicates that the suicide death rates for American Indian/Alaska Natives ages 15 to 34 (crude rate = 24.79 per 100,000) are nearly two times higher than all other races for this same age group (CDC, 2010; 2012). The next highest suicide death rates for this same age range occur among White, non-Hispanic young adults (crude rate = 16.05 per 100,000). The final three ethnic minority groups with epidemiological data have similar suicide death rates for young adults of this same age group (crude rate = 7.83 per 100,000 for Hispanics; crude rate = 7.33 per 100,000 for Blacks; and crude rate = 6.09 per 100,000 for Asian/Pacific Islanders; CDC, 2012). These differential suicide rates by race/ethnicity highlight the importance of studying unique and cultural risk factors among ethnic minority groups in determining suicide risk.

Although cultural factors are generally neglected in suicidology research (e.g., Gomez, Miranda, & Polanco, 2011), perceived discrimination is one cultural factor that has received attention and has been studied across different ethnic groups and in relation to physical and mental health outcomes, including suicide. A multitude of research has indicated that perceived discrimination negatively affects physical health outcomes (e.g., Clark, Anderson, Clark, & Williams, 1999; Williams & Mohammed, 2009). For example, perceived discrimination has been linked to specific physical health concerns, such as self-reported poor health, hypertension, and breast cancer, and it has also been indicated as a potential risk factor for several diseases, such as obesity, high blood pressure, and substance use (for a review, see Williams & Mohammed, 2009). Perceived discrimination has also been documented to negatively affect mental health outcomes, such as well-being, psychological distress, anxiety, and depression (Paradies, 2006; Williams, Neighbors, & Jackson, 2003). In addition, perceived discrimination has been linked to increased suicide risk for ethnic minority people. For example, perceived discrimination has been found to positively predict suicide ideation and/or suicide attempts among African Americans (Chao, Mallinckrodt, & Wei, 2012; Walker, Salami, Carter, & Flowers, 2014), American Indians (Freedenthal & Stiffman, 2004; Yoder, Whitbeck, Hoyt, & LaFromboise, 2006), Asian and Asian Americans (Cheng et al., 2010; Wang, Wong, & Fu, 2013), and Hispanic Americans (Perez-Rodriguez et al., 2014).

The link between perceived discrimination and suicide is well-established; however, this relationship may vary as a function of individual characteristics. For example, although previous theories (e.g., minority stress theory; Meyer, 1995; 2003) and research indicate minority individuals are at an increased risk for suicide due to facing increased

discrimination, oppression, and prejudice, not all ethnic minority people who experience discrimination go on to contemplate or attempt suicide. Research is needed to identify resilience factors and coping strategies that act to buffer or mitigate these risks.

A possible resiliency factor against suicide for those who experience perceived discrimination is grit. Grit has been recently gaining momentum in the positive psychology and suicidology literature. Grit is defined as perseverance through obstacles and a passion for long-term goals over time (Duckworth, Peterson, Matthews, & Kelly, 2007). Grit also encompasses working strongly toward challenges, and maintaining interest and effort over time despite adversity and failure. It has also been theorized that “gritty” individuals approach achievements as marathons with stamina (Duckworth et al., 2007). Theoretically, it follows then that despite experiencing adversity (e.g., perceived discrimination), ethnic minority people with high levels of grit may be able to persevere through these barriers, and thus, be less vulnerable to experiencing thoughts of suicide. Several constructs that are conceptually similar to grit have been previously examined in relation to perceived discrimination, such as hardiness, which is a personality-based indicator of personal control, commitment, and challenge (Dion, Dion, & Pak, 1992), and “John Henryism,” which refers to an individual’s belief of personal control over their environment and ability to overcome adversities through determination and hard work (James, Hartnett, & Kalsbeck, 1983). However, grit has not been specifically examined in the context of perceived discrimination.

To the author’s knowledge, only two previous studies (Kim, 2015; Strayhorn, 2014) have specifically examined grit in an ethnic minority sample, and only one of which (Kim, 2015) distinctly examined grit as a protective factor against suicide. The aim of the current study was to test whether grit would buffer the impact of perceived discrimination on suicide

ideation in a sample of community members who self-identified as ethnic minority group members. First, it was hypothesized that perceived discrimination would be positively and significantly associated with suicide ideation in a sample of ethnic minority group members, which would replicate previous findings (e.g., Chao et al., 2012; Cheng et al., 2010; Freedenthal & Stiffman, 2004; Perez-Rodriguez et al., 2014; Walker et al., 2014; Wang et al., 2013; Yoder et al., 2006). Previous studies have found similar buffering effects for other protective factors, such as having a strong sense of racial/ethnic identity or concept, participation in traditional activities, spirituality, religious support seeking/instrumental social support, religiosity, self-assessed health status, and possessing certain personality traits such as hardiness (e.g., Paradies, 2006; Walker et al., 2014) on the relationship between perceived discrimination and psychopathology (i.e., depression symptoms, suicide ideation). Therefore, the second hypothesis was that grit would significantly moderate the relationship between perceived discrimination and suicide ideation in a sample of ethnic minority individuals, thus weakening this relationship.

## CHAPTER II

### REVIEW OF LITERATURE

#### *Perceived Discrimination*

The construct of *perceived discrimination* has been defined in the literature using various definitions and terminology. For example, Simons, Chen, Stewart, and Brody (2003) defined *racial-ethnic discrimination* as 1) acts that are likely to be perceived as intentional, undeserved, aggressive, and as a violation of basic human rights; 2) acts that prevent the victim from engaging in an activity and challenge the person's character or self-esteem; and 3) that less available options for addressing the situation are likely to be perceived by victims of these acts. Moreover, the authors conclude that racial-ethnic discrimination fosters perceptions of injustice and threatens important activities and identities for the individual being targeted.

Clark and colleagues (1999) defined *perceived racism* as "the subjective experience of prejudice or discrimination (p. 808)." The authors assert that this definition is not limited to experiences that are objectively viewed as representing racism but also

include subtler forms of racism. These subtler forms of racism consist of belief systems and symbolic behaviors that promote the ideology of free will. This indicates that although the oppressors who are proponents of free will may not view their actions or beliefs as racist, this ideology is racist because it refuses to recognize or acknowledge the existence of physical characteristics and offenses directed at these physical characteristics. And instead, the primary responsibility for these disadvantages are directed to those who are disadvantaged themselves (Clark et al., 1999; Yetman, 1991).

Clark and colleagues (1999) assert that there may be a tendency to discount reports of racism or discrimination as a form of stressful experiences because they involve a subjective component of the individual's perception. However, Clark and colleagues (1999) also provide a rationale of how perceived racism/discrimination fits well within the stress literature, which highlights the appraisal process. According to Lazarus and Folkman (1984) stressful experiences involve both the individual's evaluation of the seriousness of an event and his or her coping responses, and these two components together determine whether a psychological stress response will occur. Therefore, the perception of seriousness of a situation is pertinent in determining one's stress response, and perceiving an experience as a form of racism or discrimination qualifies as a stressor (Clark et al., 1999).

#### *Perceived Discrimination and Health*

A multitude of research has indicated that perceived discrimination negatively affects physical health outcomes (e.g., Clark et al., 1999; Paradies, 2006; Pascoe & Richman, 2009; Williams & Mohammed, 2009; Williams et al., 2003). For example, perceived discrimination has been linked to specific physical health concerns, such as

self-reported poor health, hypertension, and breast cancer. It has also been indicated as a potential risk factor for several diseases, such as obesity, high blood pressure, and substance use (for a review, see Williams & Mohammed, 2009). Importantly, results from this body of research, including evidence from longitudinal studies suggests that self-reported racism precedes ill health rather than the other way around (Paradies, 2006).

Perceived discrimination has also been documented to negatively affect mental health outcomes (e.g., Dion et al., 1992; Paradies, 2006; Pascoe & Richman, 2009; Williams et al., 2003). For example, in a sample of 184 Chinese community members living in Toronto, Canada, it was hypothesized that experiencing discrimination would be associated with higher levels of psychological symptoms (i.e., sleep problems, headaches, inability to cope, typical mood, nervousness, and degree of worrying). Moreover, it was also hypothesized that this relationship between experienced discrimination and psychological problems would be stronger among respondents low in hardiness compared to those high in hardiness (Dion et al., 1992). Hardiness was defined as a personality-based composite consisting of a sense of control, commitment, and challenge (Kobasa, Maddi, & Courington, 1981). Study hypotheses were supported, indicating that experiences of discrimination were positively associated with an increase in psychological symptoms even after accounting for readjustment and desirability ratings. A positive association was also found between experienced discrimination and psychological symptoms among those low in hardiness, but not among those high in hardiness. Additionally, higher levels of hardiness were associated with higher levels of education, an occupation with higher socioeconomic status, and greater reported English proficiency. Findings suggest having a greater sense of personal control may buffer the

relationship between stress due to discrimination and other aversive life events for members of minority groups.

In a review of 53 population-based empirical studies of racial/ethnic discrimination and mental and physical health, 6 published peer-reviewed papers were identified that examined the link between racial/ethnic discrimination and psychological well-being (e.g., happiness and life satisfaction), five studies examined self-esteem, and 3 studies focused on perceptions of mastery or control (Williams, Neighbors, & Jackson, 2003). Out of these studies examining mental health indicators, all but one study found a positive association with discrimination. Twenty-five studies were identified that examined the link between racial/ethnic discrimination and psychological distress. Twenty out of these 25 papers reported a positive association between discrimination and psychological distress, 3 reported a conditional association, and 2 reported no association. Additionally, 4 studies were identified that examined the relationship between perceived discrimination and a diagnosis of major depression, and 3 indicated a positive association. This review paper also included one study each that focused on generalized anxiety disorder, early initiation of substance use, psychosis, and anger, and each of these studies reported a positive association with discrimination.

Expanding on Williams and colleagues' (2003) review, Paradies (2006) identified 138 epidemiological studies that examined the relationship between self-reported racism and health. The most consistent association between self-reported racism and health was found for negative mental health outcomes, in which 72% of the outcomes examined were significantly and positively associated with self-reported racism. Seven studies examined health outcomes in relation to both racism and racism-related stress. Both



racism and racism-related stress had similar associations with health-related outcomes in three of these seven studies. In the remaining four studies, racism-related stress, but not racism itself, was associated with increased systolic blood pressure; smoking; somatization; psychological distress; and depression, anxiety, and psychoticism. Previous findings of moderating and mediating variables on the racism to health relationship were also discussed. Significant moderating variables included having a strong sense of racial/ethnic identity or concept, participation in traditional activities, spirituality, religious support seeking/instrumental social support, psychological distress, self-assessed health status, and having certain personality traits (e.g., hardiness) were found to attenuate the adverse effects of self-reported racism on depression symptoms. Significant moderating variables that were found to intensify the relationship between racism and negative health outcomes included self-esteem, stressful events, substances misuse, life satisfaction, and anxiety/depression. Stress was shown to be a significant mediator between self-reported racism and health. Self-esteem was found to mediate the relationship between self-reported racism and blood pressure, psychological distress, and depression/anxiety for male but not female adolescents. In addition, the relationships between self-reported racism and substances use, self-assessed health, alcohol abuse, and impaired fasting glucose have also been found to be mediated by psychological distress, depression, historical loss, and waist circumference.

The association between perceived racism/discrimination and negative mental health is well established. Protective and coping factors have been examined as potential buffers of this relationship. In a review paper focused on coping with racism, 12 published peer-reviewed papers were identified that examined the relationship between

discrimination/racism and psychological distress or depression, and the hypothesis that racial or ethnic identity buffers this relationship (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009). This hypothesis was tested in samples of African Americans, Latino(a)s, Filipinos, Koreans, and South Asian Indians. Of the 12 studies identified, only two found support for a buffering effect of racial/ethnic identity on at least one measure of psychological distress or depression. In the first study, ethnic identity served as a buffer for the predictive effects of a single item measure of discrimination on symptoms of depression among a sample of Filipino-American adults (Mossakowski, 2003). The second study found buffering effects of racial/ethnic identity on the relationship between racism and depression symptoms in a sample of African American young adults (Fischer & Shaw, 1999).

#### *Perceived Discrimination and Suicide*

The link between perceived discrimination and suicide ideation and/or suicide attempts has been established across different ethnic minority groups. For example, perceived discrimination was positively associated with suicidal feelings among a large sample of African American college students from seven Midwestern college counseling centers at predominantly White universities (Chao et al., 2012). Similarly, perceived racism was positively related to suicide ideation among African American adults from a southeastern US community (Walker et al., 2014). For American Indians, perceived discrimination due to native status was found to be significantly related to suicide attempt history among a sample of reservation-reared Indian youth (Freedenthal & Stiffman, 2004). Relatedly, perceived discrimination was associated with increased suicidal ideation in a sample of American Indian youth who lived on or near three different

reservations in the Midwestern region of the US (Yoder, Whitbeck, Hoyt, & LaFromboise, 2006). For Asian and Asian Americans, results from a study conducted on Asian international college students in the US indicated that perceived discrimination was positively associated with suicide ideation (Wang et al., 2013). Similarly, perceived discrimination was positively associated with suicidal ideation and suicide attempts in a large, nationally representative sample of Asian American adults from the community (Cheng et al., 2010). Lastly, among the largest available national sample ( $n = 6,359$ ) of Hispanic Americans to date, higher levels of perceived discrimination significantly predicted an increase in lifetime suicidal ideation and attempts (Perez-Rodriguez et al., 2014). Collectively, these findings indicate that perceived discrimination is positively associated with suicide ideation and/or attempts across different ethnic minority groups, including African Americans, American Indians, Asian and Asian Americans, and Hispanic Americans.

Perceived discrimination has also been examined among ethnically diverse samples. The relationship between perceived racial discrimination and suicidal ideation was examined in a sample of Asian American and Latino/a college students at a university located in the Rocky Mountain region of the US (Hwang & Goto, 2008). Results indicated no differences in exposure to discrimination overall between Asian and Latino college students. However, results indicated that Latinos were significantly more likely to be accused or suspected of doing something wrong (e.g., cheating, stealing, not doing their share of the work, or breaking the law), and they were more likely to perceive these events as stressful. After controlling for gender, classification, financial stress, and ethnicity, higher levels of perceived discrimination were associated with higher rates of

psychological distress, state anxiety, trait anxiety, clinical depression, and suicidal ideation.

In addition to examining perceived discrimination in the context of diverse samples, perceived discrimination has also been explored in combination with other culturally-relevant factors. Perceived discrimination and acculturative stress were examined as predictors of suicide attempt history in a large sample of Asian, Latino, Black, and White (U.S.-born and non-U.S.-born) young adults from a public university in the northeastern US (Gomez, Miranda, & Polanco, 2011). Results indicated there were no statistically significant differences in suicide attempt history across the different ethnic/racial groups. However, Asian and Black participants reported experiencing increased rates of perceived discrimination in the past year, and Asian participants reported higher acculturative stress compared to other racial/ethnic groups. Perceived discrimination was associated with over 5 times higher odds of a suicide attempt overall. Interestingly, perceived discrimination was associated with over 10 times higher odds of a suicide attempt among White, U.S.-born participants, and 3 times higher odds of a suicide attempt among Latino participants. The authors theorized these unique findings indicate that White racial identity possibly has a more salient role in an ethnically diverse college setting, where the majority of students are not White. In turn, these individuals may be more vulnerable to the effects of discrimination on a college campus compared to in the community.

Perceived discrimination and acculturative stress were also examined with hopelessness, symptoms of depression, and suicidal ideation in a longitudinal study of ethnically diverse non-US-born adults ages 18 to 25 (Polanco-Roman & Miranda, 2013).

Specifically, hopelessness was examined as a mediator between perceived discrimination, acculturative stress and both depression and suicidal ideation. Results indicated that baseline levels of perceived discrimination and acculturative stress predicted increased levels of hopelessness but not depression symptoms at follow-up (2 to 3 years later). Results also indicated that perceived discrimination had an indirect effect on depression symptoms through hopelessness. Contrary to study hypotheses, perceived discrimination was not directly related to suicidal ideation at follow-up. Additionally, there was an indirect effect of perceived discrimination on both depression and suicidal ideation through hopelessness but only at low levels of ethnic identity. Moreover, these findings indicate that perceived discrimination and acculturative stress may increase vulnerability to depression and suicidal ideation through feelings of hopelessness; however, having a strong ethnic identity may buffer against this relationship for ethnically diverse immigrants in the US.

Perceived discrimination has also been studied in combination with other previously identified suicide risk factors. The moderating effect of perceived discrimination on the relationship between the interpersonal risk factors (i.e., perceived burdensomeness and thwarted belongingness) and suicide ideation was examined in a sample of Asian international college students at a Midwestern university (Wang, Wong, & Fu, 2013). It was hypothesized that higher levels of perceived discrimination would exacerbate the effects of perceived burdensomeness and thwarted belongingness on suicide ideation while controlling for gender, depression symptoms, and length of time spent in the US. Study hypotheses were supported, and results indicated that at high levels of perceived discrimination, perceived burdensomeness was significantly and

positively associated with suicide ideation. Similarly, at high levels of perceived discrimination, thwarted belongingness was significantly and positively associated with suicide ideation. These results indicate that perceived discrimination significantly strengthened the relationships between the two interpersonal risk factors and suicide ideation above and beyond gender, depression symptoms, and length of time spent in the US.

Few studies have empirically examined the relationship between perceived discrimination and suicide while also looking at resilience factors. The potential mediating and moderating effects of resilience factors were examined on the relationship between perceived racial discrimination and suicide ideation in a community sample of African Americans (Walker, Salami, Carter, & Flowers, 2014). Specifically, two moderated mediation models were used to examine whether depression symptoms would mediate the relationship between perceived racism and suicide ideation at lower levels of intrinsic and extrinsic religiosity after controlling for age, gender, and socioeconomic status. Study hypotheses were partially supported. Results indicated that perceived racism was directly and indirectly related to suicide ideation in this sample of African American community members. Increased perceptions of racial discrimination were associated with increases in suicide ideation and also with increases in depression symptoms, which in turn, were associated with increased thoughts of suicide. Results also indicated that for those high in extrinsic religiosity, extrinsic religiosity buffered the effects of perceived racism on the depression-suicide ideation relationship. However, this relationship was non-significant when examining intrinsic religiosity as a moderator. These findings

indicate that extrinsic religiosity may be a particularly salient resiliency factor against suicide for African American adults in the community.

### *Grit*

The link between perceived discrimination and suicide has been well-established; however, this relationship may vary as a function of other individual characteristics. One such individual characteristic and possible protective factor against suicide for those who experience perceived discrimination is grit. Grit is defined as perseverance through obstacles and a passion for long-term goals over time (Duckworth et al., 2007).

According to Duckworth and colleagues (2007), grit encompasses working strongly toward challenges, and maintaining interest and effort over time despite adversity and failure. These authors go on to conclude that “gritty” individuals approach achievements as marathons and that stamina is their advantage.

In order to better understand grit conceptually as a newly identified protective factor in the literature, it’s important to examine its associations with other variables. For example, grit has been found to positively increase over time with age and educational attainment (Duckworth et al., 2007). Grit has also been found to be a better predictor of number of lifetime career changes above and beyond age and all Big Five personality traits (Duckworth et al., 2007). Grit was also related to self-control, and it predicted completion of a rigorous summer training program better than any other predictor examined (e.g., self-control and whole candidate score, which included SAT score, high school class rank, leadership potential score, and physical aptitude exam) in a sample of US Military freshman cadets (Duckworth et al., 2007).

Several studies have examined the similarities between grit and other positive psychology constructs. For example, in a sample of undergraduate technology students, grit was positively associated with positive affect, happiness, and life satisfaction, and grit was negatively associated with negative affect (Singh & Jha, 2008). In another large sample of emerging adults and older adults, grit, optimism, forgiveness, and meaning in life were found to be conceptually related to high levels of personal spirituality using a latent class analysis (LCA). Collectively, these positive psychological constructs (grit, optimism, forgiveness, and meaning in life) were inversely related to symptoms of depression among this sample (Barton & Miller, 2015). These findings give way to how grit is characterized as a resilience factor more generally, and how grit relates positively to similar constructs from the positive psychology literature and negatively to psychopathology (i.e., depression symptoms).

The majority of the aforementioned research on grit was examined in predominantly White samples. However, one study has examined grit in a sample of Black males. The relationship of grit and educational attainment was examined among a sample of Black male college students enrolled at a large, predominantly White institution (PWI; Strayhorn, 2014). Results indicated grit was positively associated with college grades, high school grades, and ACT scores in this sample. Grit also positively predicted Black male collegians' grades in college after controlling for demographic variables (age, classification), academic variables (international status, athlete status, transfer status, fraternity membership), and prior academic achievement (educational aspirations, ACT score, and self-reported high school GPA). These findings indicate that grittier Black males earn higher grades in college compared to their same-race male



counterparts who are low in grit, and grit was a better incremental predictor of educational achievement than traditional measures of academic ability.

### *Grit and Suicide*

It has been theorized that in select scenarios grit may actually confer increased risk toward suicidal behavior (Anestis & Selby, 2015). For example, high levels of grit correspond to a greater ability to pursue goals in the context of negative affect, which overlaps with the concept of distress tolerance (Anestis, Kleiman, Lavender, Tull, & Gratz, 2014). Results of a mediation analysis indicated that the indirect effect of grit on suicide attempts through NSSI was significant, while the direct effect of grit on suicide attempts was not significant when NSSI was included in the model (Anestis et al., 2014).

In a recent and related study, perseverance (a component of impulsivity, where the lack of perseverance indicates the degree to which an individual quits tasks) and grit were hypothesized to predict increased suicide attempts with clear intent to die (Anestis & Selby, 2015). It was also hypothesized that both grit and perseverance would moderate the relationship between NSSI and suicide attempts. Results indicated that grit predicted increased suicide attempts with clear intent to die above and beyond gender, depression symptoms, and NSSI. Similarly, perseverance also predicted increased suicide attempts with the same controlled variables. Additionally, grit significantly moderated the relationship between NSSI and suicide attempts. Perseverance also moderated this relationship, such that as an individual's persistence grows during difficult or boring tasks, the relationship between NSSI and suicide attempts with clear intent is strengthened. These findings indicate that as individuals exhibit greater ability to persist toward long-term goals, the relationship between NSSI and suicide attempts is

strengthened. These findings are in line with the acquired capability component of the interpersonal theory of suicide (Joiner, 2005), which states one must successfully overcome the distress associated with painful and provocative events and death to enact a suicide attempt.

Although the previously discussed findings suggested that grit conferred risk for suicidal behavior, other research has indicated that grit (and conceptually similar constructs) may have a protective role against suicide. It was hypothesized that having a positive future orientation would be negatively associated with suicide ideation and suicide attempts in a sample of inpatients ages 50 years and older with major depressive disorder (Hirsch et al., 2006). Results indicated that individuals with higher future orientation were less likely to report any current suicide ideation, had lower worst-point suicide ideation, and were less likely to have ever attempted suicide after controlling for hopelessness, depression, and demographic variables. Future orientation was not significantly related to current attempter status. These results indicated that positive future orientation distinguished between suicide attempters and non-attempters among depressed individuals ages 50 and older. Although the construct of grit was not directly measured in this study, positive future orientation is in line with the definition of grit as a strategy to achieve carefully identified goals and to overcome adversity (Hirsch et al., 2006; Kleiman, Adams, Kashdan, & Riskind, 2013; Pennings, Law, Green, & Anestis, 2015).

In a diverse sample of college students (54% Caucasian, 20% Asian, 13% African American, and 13% identified as “other” racial/ethnic group), grit was prospectively examined in combination with gratitude to predict suicide ideation (Kleiman et al., 2013).

The authors hypothesized that individuals high in grit (an intrapersonal resilience factor) and high in gratitude (an interpersonal resilience factor) would experience the least suicide ideation compared to individuals with any other configurations of grit and gratitude. The authors also hypothesized that meaning in life would mediate the effects of grit and gratitude on suicide ideation while controlling for depression symptoms. Results indicated the interaction between grit and gratitude through meaning in life on suicide ideation was significant. This finding reveals that gratitude and the synergistic effect of grit and gratitude indirectly predicted suicide ideation through meaning in life.

The protective effects of grit have also been recently examined on the relationships between hopelessness and two measures of suicidality – suicidal ideation and resolved plans and preparations for suicide using a sample of US military personnel (Pennings et al., 2015). Results indicated that grit significantly moderated the relationship between hopelessness and current suicidal ideation while controlling for symptoms of depression and demographic variables. Simple slopes analyses indicated that the magnitude of the association between hopelessness and current suicidal ideation decreased from low to mean to high levels of grit, indicating that as individuals exhibit a greater ability to pursue long-term goals, the relationship between hopelessness and suicidal ideation weakens. Similarly, grit significantly moderated the relationship between hopelessness and resolved plans and preparations for suicide while controlling for symptoms of depression and demographic variables. Simple slopes analyses indicated this relationship was significant and positive at low levels of grit, non-significant at mean levels of grit, and significant and negative at high levels of grit. These complex findings suggest that hopelessness is a robust risk factor for resolved plans and preparations for

suicide at low levels of grit. Interestingly, at high levels of grit, hopelessness was inversely associated with resolved plans and preparations for suicide. The authors theorized these findings may suggest that grit inhibits suicide plans among individuals experiencing hopelessness; however, when plans are developed and death has become an individual's long-term goal, grit may help to facilitate this outcome.

Grit was also examined as a potential moderator and mediator of the relationship between depression symptoms and suicide ideation among a sample of Korean elderly adults (Kim, 2015). Results of this study indicated that grit significantly moderated the relationship between depression and suicide ideation, such that those high in grit had lower levels of suicide ideation and those low in grit and high in depression symptoms had increased levels of suicide ideation. However, for those with low depression symptoms, there was almost no difference in their level of suicide ideation regardless of their level of grit. Grit also had a significant indirect effect on the depression and suicide ideation relationship, which indicated that grit decreased the impact of depression symptoms on suicide ideation.

### *Current Study*

To the author's knowledge, only one previous study (see Kim, 2015) has examined grit as a protective factor against suicide in an ethnic minority sample. Grit has also not been previously examined in relation to perceived discrimination. However, these relationships are important to investigate because grit may serve as a particularly salient protective factor against suicide for ethnic minority people. By definition, grit encompasses working strongly toward challenges, and maintaining interest and effort over time despite adversity and failure (Duckworth et al., 2007). It follows then that

despite experiencing adversity (e.g., perceived discrimination), ethnic minority people with high levels of grit may be able to persevere through these barriers, and thus, be less vulnerable to experiencing thoughts of suicide.

## CHAPTER III

### METHODOLOGY

#### *Participants*

A total of 97 participants were excluded from the current analyses. Sixty-four participants were excluded because they did not complete the first branch of questionnaires, which included the variables of interest for the current study (i.e., GED, Grit, BSI). Sixteen participants were excluded because they did not identify as an ethnic minority group member. Fifteen participants were excluded because the majority of their data was missing on all questionnaires. One participant was excluded because they indicated that their age was “8” years old. One participant was excluded for invalid responding. Profiles were classified as invalid if participants had a score of 4 or above on the 8 infrequency items, which is consistent with previous literature (Lynam et al., 2011). After participants were excluded for the preceding reasons, this resulted in a total sample of 215 participants.

Participants included 142 (66.0%) females and 73 (34.0%) males who identified as ethnic minority group members. Participants' ages ranged from 18 to 72 ( $M = 26.60$ ,  $SD = 10.99$ ). The ethnic composition of this sample included 61 (28.4%) American Indian/Native Americans; 47 (21.9%) Blacks or African Americans; 41 (19.1%) who identified as Mixed/parents from two different groups; 36 (16.7%) Hispanics or Latino(a)s, including Mexican Americans, Central Americans, and others; 23 (10.7%) Asians or Asian Americans, including Chinese, Japanese, and others; and 7 (3.3%) who identified as "another" ethnicity. The sexual orientation breakdown indicated that 192 (89.3%) identified as heterosexual or straight, 11 (5.1%) identified as homosexual (lesbian or gay), 8 (3.7%) identified as bisexual, 3 (1.4%) identified as "another" sexual orientation not listed, and 1 (0.5%) participant declined to state their sexual orientation. The romantic partner status breakdown included 134 (62.3%) individuals not married, 48 (22.3%) married individuals, 19 (8.8%) individuals cohabiting (living with a partner), 9 (4.2%) individuals who identified as "other" romantic partner status, 4 (1.9%) divorced individuals, and 1 (0.5%) participant declined to state their romantic partner status. The current employment status of participants included 82 (38.1%) individuals employed part-time, 56 (26.0%) individuals employed full-time, 56 (26.0%) individuals unemployed, 15 (7.0%) individuals employed as work-study, 4 (1.9%) individuals who indicated "other" employment, and 2 (0.9%) individuals who declined to state their employment. The median annual household income was between \$20,000 and \$30,000.

Sixty-three (29.4%) participants had a non-zero score on the first five items of the Beck Scale for Suicide Ideation, which was used as a proxy for suicide ideation in the current analyses and is consistent with previous literature (e.g., Brown, 2001; van Spijker

et al., 2010). Of the current sample, 76 (35.3%) reported seeking treatment for psychological problems in their lifetime (as assessed in the demographics questionnaire), 39 (18.1%) endorsed a past suicide attempt (as assessed by item 20 of the BSI), and 18 (8.4%) endorsed experiencing suicide ideation in the past 2 weeks (as assessed by item 9 of the PHQ-9)

### *Measures*

*Demographics Questionnaire.* A demographics questionnaire was administered to participants to obtain information regarding their sex, age, ethnicity/race, sexual orientation, romantic partner status, employment status, annual income level, and history of psychological treatment.

*General Ethnic Discrimination Scale.* The General Ethnic Discrimination Scale (GED; Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006) was modeled on the Schedule of Racist Events (SRE; Landrine & Klonoff, 1996), and is an 18-item self-report measure that assesses the frequency to which ethnic/racial minority people have experienced racist events (types of racist discrimination) and the stressfulness of these events. Each of the 18-items is completed three times: once for the frequency of the racist events in the past year, once for the frequency of the racist events during one's entire lifetime, and once for the appraisal of the stressfulness of the racist events (only 17 items are completed for appraisal). The frequency responses are rated on a 6-point Likert scale, where the numbers indicate the frequency of occurrences. The appraisal of the stressfulness of the racist events are rated on a 6-point Likert scale, from 1 (*not at all*) to 6 (*extremely*). These three ratings can be summed and examined separately to yield three different subscales, including recent discrimination, lifetime discrimination, and



appraised discrimination. In addition, the last item (#18) asks about how different an individual's life would be if they had not experienced racist and unfair treatment, and these responses are also measured on a 6-point Likert scale, from 1 (*same as now*) to 6 (*totally different*). In the current study, the recent discrimination subscale demonstrated excellent reliability ( $\alpha = .93$ ), the lifetime discrimination subscale demonstrated excellent reliability ( $\alpha = .95$ ), and the appraised discrimination subscale demonstrated excellent reliability ( $\alpha = .95$ ).

*The Grit Scale.* The Grit Scale (Duckworth, Peterson, Matthews, & Kelly, 2007) is a 12-item self-report measure of an individual's perseverance related to reaching long-term goals. Response items are measured on a 5-point Likert scale, and range from 1 (*not like me at all*) to 5 (*very much like me*). The Grit Scale contains two subscales, Consistency of Interest and Perseverance of Effort, which are comprised of 6 items each. The Grit Scale demonstrated acceptable reliability ( $\alpha = .77$ ) in the current study.

*The Beck Scale for Suicide Ideation.* The Beck Scale for Suicide Ideation (BSI; Beck & Steer, 1991) is a 21-item self-report instrument that assesses the current intensity of an individual's specific attitudes, behaviors, and plans for suicide during the past week. The BSI is rated on a 3-point Likert scale ranging from 0 to 2. The first five items of the BSI were used in the current analyses as a screener for suicide ideation, which is consistent with previous studies (e.g., Brown, 2001; van Spijker et al., 2010). The first five items of the BSS demonstrated acceptable reliability ( $\alpha = .79$ ) in the current study.

#### *Additional Measures*

Several additional measures were included in the larger study dataset to explore future research questions.

### *Procedure*

Participants were recruited from the community using snowball sampling techniques. The inclusion criteria for the current study indicated that participants be at least 18 years of age and self-identify as members of an ethnic minority group. Those who met eligibility criteria completed the survey online via Qualtrics, which included a brief video of the researcher detailing the purpose of the study, an informed consent, battery of measures, debriefing information, and a list of local and national psychological resources. Questionnaires were randomized within separate branches on Qualtrics. The first branch included measures of interest for the current study (i.e., GED, Grit, BSI). The second branch consisted of the demographics questionnaire, which was strategically placed after the General Ethnic Discrimination Scale as to not prime participants about questions of discrimination based on their ethnic identity. Past research indicates that simply reporting race/ethnicity may impair or influence participants' performance on subsequent tests by making racial stereotypes salient (e.g., Steele & Aronson, 1995). The last branch consisted of the remaining additional measures. Upon completion of the study, participants were asked to enter their first and last name and email address in order to be eligible for compensation. This information was kept separate from the rest of their survey responses to protect confidentiality and anonymity. One in two (50%) of participants were randomly selected to receive a \$10 electronic Amazon gift card, which was sent to the email address that they provided at the end of the survey.

## CHAPTER IV

### FINDINGS

#### *Statistical Analyses*

Zero-order correlations were conducted to determine whether perceived discrimination (recent discrimination, lifetime discrimination, and appraised discrimination) and suicide ideation were positively associated with each other. As predicted, suicide ideation was positively and significantly associated with recent discrimination ( $r = .22, p < .01$ ), lifetime discrimination ( $r = .25, p < .01$ ), and appraised discrimination ( $r = .22, p < .01$ ). Grit was negatively and significantly associated with suicide ideation ( $r = -.26, p < .01$ ). Grit was also negatively, but non-significantly associated with recent discrimination ( $r = -.05, p = .48$ ), lifetime discrimination ( $r = -.10, p = .15$ ), and appraised discrimination ( $r = -.07, p = .30$ ). These findings support the MacArthur approach for the criteria of defining moderators, which suggests that moderating variables should be independent from predictor variables (Chmura Kraemer, Kiernan, Essex, & Kupfer, 2008). Correlations, means, standard deviations, and the

range of study variables are listed in Table 1. Means and standard deviations of study variables by ethnic group are listed in Table 5.

Three separate multiple regression analyses were used to determine whether grit significantly moderated (buffered) the relationship between the three types of perceived discrimination (recent discrimination, lifetime discrimination, appraised discrimination) and suicide ideation. To test the moderation hypotheses, recommendations of Aiken and West (1991) were followed. The independent variables (recent discrimination, lifetime discrimination, and appraised discrimination) and the moderating variable (grit) were each centered by subtracting each variable by its mean. Interaction terms (recent discrimination x grit, lifetime discrimination x grit, and appraised discrimination x grit) were then calculated using the centered variables.

For the first multiple regression analysis, the main effects of grit and recent discrimination were entered into the first block of the regression, and the interaction of grit and recent discrimination was entered into the second block of the regression. Results of the regression indicated that the overall model was significant,  $F(3, 211) = 10.44, p < .001$  and explained 11.7% of the variance. Recent discrimination positively predicted suicide ideation ( $\beta = .19, t[214] = 2.82, p < .01$ ), and grit negatively predicted suicide ideation ( $\beta = -.24, t[214] = -3.75, p < .001$ ). Results also indicated that there was a significant interaction between recent discrimination and grit in negatively predicting suicide ideation ( $\beta = -.13, t[214] = -1.97, p = .05$ ; see Table 2). Because this interaction term was significant, simple slopes were then computed by plotting values one standard deviation above and below each variable (Aiken & West, 1991). Results of the simple slopes analyses indicated that the relationship between recent discrimination and suicide

ideation was non-significant ( $\beta = .05$ ,  $t[214] = .52$ ,  $p = .60$ ) at high levels of grit. Alternatively, the simple slope of the moderator, high grit, was significant ( $\beta = -.24$ ,  $t[214] = -3.75$ ,  $p < .001$ ) in negatively predicting suicide ideation. In addition, results of the simple slopes analyses indicated the relationship between recent discrimination and suicide ideation was significant ( $\beta = .32$ ,  $t[214] = 3.76$ ,  $p < .001$ ) at low levels of grit. The simple slope of the moderator, low grit, was also significant ( $\beta = -.24$ ,  $t[214] = -3.75$ ,  $p < .001$ ) in negatively predicting suicide ideation. For a visual representation of these results, see Figure 1.

For the second multiple regression analysis, the main effects of grit and lifetime discrimination were entered into the first block of the regressions, and the interaction of grit and lifetime discrimination was entered into the second block of the regression. Results of the regression indicated that the overall model was significant,  $F(3, 211) = 10.73$ ,  $p < .001$  and explained 12.0% of the variance. Lifetime discrimination positively predicted suicide ideation ( $\beta = .21$ ,  $t[214] = 3.28$ ,  $p < .01$ ), and grit negatively predicted suicide ideation ( $\beta = -.22$ ,  $t[214] = -3.28$ ,  $p < .01$ ). However, the interaction between lifetime discrimination and grit in negatively predicting suicide ideation was non-significant ( $\beta = -.11$ ,  $t[214] = -1.72$ ,  $p = .087$ ; see Table 3). Because this interaction was non-significant, simple slopes analyses were not computed.

For the third multiple regression analysis, the main effects of grit and appraised discrimination were entered into the first block of the regression, and the interaction of grit and appraised discrimination was entered into the second block of the regression. Results of the regression indicated that the overall model was significant,  $F(3, 211) = 9.92$ ,  $p < .001$  and explained 11.1% of the variance. Appraised discrimination positively

predicted suicide ideation ( $\beta = .21$ ,  $t[214] = 3.25$ ,  $p < .01$ ), and grit negatively predicted suicide ideation ( $\beta = -.22$ ,  $t[214] = -3.35$ ,  $p < .01$ ). However, the interaction between appraised discrimination and grit in negatively predicting suicide ideation was non-significant ( $\beta = -.12$ ,  $t[214] = -1.73$ ,  $p = .085$ ; see Table 4). Because this interaction term was non-significant, simple slopes analyses were not computed.

## CHAPTER V

### CONCLUSION

The aim of the current study was to investigate the association between perceived discrimination and suicide in a sample of ethnic minority individuals recruited from the community. Specifically, it was hypothesized that perceived discrimination would be positively and significantly associated with suicide ideation. It was also hypothesized that grit would significantly moderate the relationship between perceived discrimination and suicide ideation, thus weakening this relationship in this sample. Hypotheses were partially supported. The hypothesized association between perceived discrimination and suicide ideation was supported, which replicates previous findings (e.g., Chao et al., 2012; Cheng et al., 2010; Freedenthal & Stiffman, 2004; Perez-Rodriguez et al., 2014; Walker et al., 2014; Wang et al., 2013; Yoder et al., 2006). Grit and suicide ideation were negatively and significantly associated, which also replicates previous findings (e.g., Kim, 2015; Kleiman et al., 2013; Pennings et al., 2015). Additionally, grit as a hypothesized moderator of the relationship between perceived discrimination and suicide

was supported, but this relationship was only statistically significant with recent discrimination as the predictor.

Results of the simple slopes analyses demonstrated that the relationship between recent discrimination and suicide ideation was strengthened at low levels of grit. However, at high levels of grit, the relationship between perceived discrimination and suicide ideation was non-significant. These findings suggest that ethnic minority individuals who are low in grit and experience high rates of recent discrimination may be more susceptible to thoughts of suicide. However, ethnic minority individuals who are high in grit may be less likely to experience thoughts of suicide regardless of their level of recent discrimination.

A possible explanation of why grit moderated only the relationship between recent discrimination and suicide ideation, and not the relationships between the other discrimination subtypes (lifetime discrimination, appraised discrimination) and suicide ideation, is that recent discriminatory events may be particularly salient experiences, as opposed to events and stressful experiences that happened years ago. Moreover, recent discrimination may be more proximally related to suicide ideation compared to lifetime discrimination and appraised discrimination, which may be more distal risk factors for suicide. This explanation is consistent with previous research that has used the General Ethnic Discrimination scale. Borders and Liang (2011) found that compared to lifetime discrimination and appraised discrimination, recent discrimination shared more variance with negative outcomes, including emotional distress, aggression, and depression symptoms. Additionally, in their meta-analysis, Pascoe and Richman (2009) found that



recent discrimination consistently had a more significant negative effect on mental health outcomes compared to lifetime discrimination.

The current study has a number of important strengths. To date, much of the suicidology literature has focused on White/Caucasian samples (Leong & Leach, 2010). To complicate matters, ethnic minority individuals are less likely to participate in mental health research due to barriers, such as stigma and financial constraints (Brown, Marshall, Bower, Woodham, & Waheed, 2014). Participants in the current study represented five different ethnic minority groups, including American Indian/Native Americans, Blacks or African Americans, Mixed or Biracial ethnic groups, Hispanics or Latino(a)s, and Asians or Asian Americans, as well as those who identified with “another” ethnic minority group. Therefore, the ethnic diversity of the current sample is a unique strength and addition to the suicidology literature. Another strength of this study was the use of a community sample, which generally has higher base rates of suicidal behavior compared to college samples (Silverman, Meyer, Sloane, Raffel, & Pratt, 1997). Another strength of the current study was the examination of perceived discrimination, a sociocultural variable, as a risk factor for suicide. Past research has called for the increased examination of sociocultural factors and how these factors may relate to suicide risk (e.g., Gomez, Miranda, & Polanco, 2011; Walker, 2007). An additional strength of the current study was the examination of grit as a possible protective factor against suicide. To date, only two previous studies (Kim, 2015; Strayhorn, 2014) have examined grit in ethnic minority samples, and only one of which (Kim, 2015) examined grit as a protective factor against suicide. No previous study has investigated grit in the context of

sociocultural variables (i.e., perceived discrimination) and suicide. Thus, this study contributed to a void in the suicidology literature.

There are several limitations of the current study, and future research can help to address these limitations. One limitation was the use of a cross-sectional design, which limits understanding of temporal and causal relationships. For example, it could be that individuals who are already experiencing thoughts of suicide and/or depressive cognitions are more likely to perceive discriminatory events as occurring to them, and may be more likely to perceive these events as more stressful. Future research should replicate the current study using a longitudinal design to better determine the temporal and casual nature of these variables. Another limitation to be considered was that all ethnic minority groups were combined and examined together in these analyses, which likely impacted the results. Future research should examine the hypothesized relationships within specific ethnic minority groups (e.g., American Indians) to better understand the role of perceived discrimination and grit in suicide risk. An additional limitation was that participants had to take the survey on their own electronic device, such as a tablet or laptop computer, and with their own internet access. Recent estimates indicate that 45% of adults in the US own a tablet and 78% of adults under age 30 own a laptop or desktop computer (Anderson, 2015). However, these estimates may be inflated compared to ethnic minority group members who, on average, tend to be lower in socioeconomic status. Therefore, caution must be ensued when generalizing the current findings to ethnic minority group members in the community. Future research could address this limitation by replicating the current study using an in-laboratory design where participants take the survey using the researcher's computer and internet access.

An additional future direction involves behavioral assessments of suicide ideation. Specifically, implicit methods of assessment, such as the implicit association task (IAT) and the affect misattribution procedure (AMP) have demonstrated promising results for assessing suicidality (e.g., Nock, Park, Finn, Deliberto, Dour, & Banaji, 2010; Tucker & Wingate, In Preparation). Therefore, future research may replicate the current study using implicit measures of suicide to determine whether these methods are more accurate in predicting an individual's risk for suicide.

Clinical implications of the current findings suggest that grit may be a salient protective factor against suicide for ethnic minority individuals. Thus, for ethnic minority individuals, having high grit (the ability to persevere through barriers and overcome adversity) may distinguish between those who ideate from those who do not when recent discrimination is present. Therefore, it may be beneficial for clinicians to incorporate an assessment of grit into suicide prevention and intervention efforts. Levels of grit could be also be monitored throughout treatment by the client. For example, the “Virtual Hope Box” is a smartphone application that allows clients to monitor their levels of hope, and it has shown preliminary effectiveness in treating negative thinking in a sample of high-risk Veteran patients (Bush et al., 2015). A similar smartphone application software could be developed for clients to monitor their levels of grit over time. Another clinical implication is that high levels of grit may correspond to a greater ability to pursue goals in the context of negative affect, and this definition overlaps with the concept of distress tolerance (Anestis et al., 2014; Klonsky, Oltmanns, & Turkheimer, 2003; Simons & Gaher, 2005). Therefore, empirically-supported treatments that incorporate learning and managing distress tolerance skills, such as Dialectical Behavior Therapy (Linehan, 1993;

2014), may be effective in treating ethnic minority clients who experience discrimination and/or suicide ideation. Additionally, using an Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) approach may be helpful for clinicians when treating ethnic minority clients who experience discrimination. Borders and Liang (2011) caution that this approach does not equate with the acceptance of discrimination, but that the acceptance of negative emotions resulting from perceived discrimination may free clients to focus on aspects that they can change, thus promoting more adaptive and constructive coping strategies.

Results of the current study indicate that perceived discrimination is positively linked to thoughts of suicide. More broadly, there are important societal and cultural implications for the prevalence of discrimination in modern society that may help to protect against negative outcomes. Although scholars generally agree that blatant forms of racial discrimination have decreased since the 1960s (e.g., Dovidio & Gaertner, 2004; Steele, 1997), discriminatory practices still exist and may appear in more subtle forms, such as through racial microaggressions. Racial microaggressions are brief and everyday exchanges that send belittling messages to people of color based on their racial minority group membership (Sue et al., 2007). Sue and colleagues stated that they developed the Racial Microaggressions theory and classification system to help people of color understand this phenomenon and also to educate White people (DeAngelis, 2009). Additionally, Sue and colleagues (2007) indicate that racial microaggressions can occur by anyone, regardless of their ethnicity. For example, it is plausible that ethnic minority members microaggress on members of their same or different ethnic minority groups. Sue asserts that educating individuals who commit racial microaggressions about the

harmful effects can help to decrease the frequency of these exchanges (DeAngelis, 2009). Education about racial microaggressions and other discriminatory practices could be facilitated by conducting workshops and support groups across settings (e.g., college campuses, counseling centers, etc.) that acknowledge the experiences of discrimination and promote the value of cultural diversity and acceptance (Hwang & Goto, 2008). Reducing discrimination toward minority young adults and students may be particularly important because they are often the targets of racial stereotypes, prejudice, and unfair treatment by peers, faculty, and staff (Ancis, Sedlacek, & Mohr, 2000).

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## APPENDICES

## Appendix A

### **Tables**

Table 1.

*Means, Standard Deviations, Ranges, and Correlation Coefficients of Study Variables*

Variable	RD	LD	AD	Grit	SI
RD	-				
LD	.83**	-			
AD	.78**	.87**	-		
Grit	-.05	-.10	-.07	-	
SI	.22**	.25**	.22**	-.26**	-
<i>M</i>	31.40	37.42	39.15	42.51	0.67
<i>SD</i>	13.93	16.40	20.56	6.698	1.39
<i>Range<sup>a</sup></i>	18-108	18-108	17-102	12-60	0-10

*Note.* RD indicates Recent Discrimination; LD indicates Lifetime Discrimination; AD indicates Appraised Discrimination; and SI indicates Suicide Ideation.

<sup>a</sup>Range of possible scores.

\*\*  $p < .01$

Table 2.

*Multiple Regression Analysis of Recent Discrimination, Grit, and the Interaction of Recent Discrimination x Grit as Predictors of Suicide Ideation*

Predictors entered in step	<i>F</i>	$\Delta R^2$	<i>df</i>	<i>t</i>	$\beta$	<i>p</i>
Step 1	13.53	.11	214			.000
RD				3.23	.21	.001
Grit				-3.92	-.25	.000
Step 2	10.44	.12	214			.000
RD				2.82	.19	.005
Grit				-3.75	-.24	.000
RD x Grit				-1.97	-.13	.050

*Note.* RD indicates Recent Discrimination; RD x Grit indicates the interaction of Recent Discrimination and Grit.

Table 3.

*Multiple Regression Analysis of Lifetime Discrimination, Grit, and the Interaction of Lifetime Discrimination x Grit as Predictors of Suicide Ideation*

Predictors entered in step	<i>F</i>	$\Delta R^2$	<i>df</i>	<i>t</i>	$\beta$	<i>p</i>
Step 1	14.48	.11	214			.000
LD				3.49	.23	.001
Grit				-3.73	-.24	.000
Step 2	10.73	.12	214			.087
LD				3.28	.21	.001
Grit				-3.28	-.22	.001
LD x Grit				-1.72	-.11	.087

*Note.* LD indicates Lifetime Discrimination; LD x Grit indicates the interaction of Lifetime Discrimination and Grit.

Table 4.

*Multiple Regression Analysis of Appraised Discrimination, Grit, and the Interaction of Appraised Discrimination x Grit as Predictors of Suicide Ideation*

Predictors entered in step	<i>F</i>	$\Delta R^2$	<i>df</i>	<i>t</i>	$\beta$	<i>p</i>
Step 1	13.26	.11	214			.000
AD				3.15	.21	.002
Grit				-3.84	-.25	.000
Step 2	9.92	.01	214			.085
AD				3.25	.21	.001
Grit				-3.35	-.22	.001
AD x Grit				-1.73	-.12	.085

*Note.* AD indicates Appraised Discrimination; AD x Grit indicates the interaction of Appraised Discrimination and Grit.

Table 5

*Means and Standard Deviations of Study Variables by Ethnic Group*

Ethnic Group	RD		LD		AD		Grit		SI		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SI</i>
1. Native Am.	61	27.67	13.58	31.18	15.43	32.08	21.46	42.38	6.97	.57	1.35
2. Afri. Am/Bl.	47	40.49	13.96	47.96	15.61	52.06	19.36	43.62	6.58	.72	1.39
3. Mixed	41	27.29	9.65	34.39	14.15	34.17	16.66	41.58	5.83	.95	1.83
4. Hisp./Lat.	36	28.94	11.15	36.67	14.92	38.06	15.67	42.75	6.43	.39	.87
5. Asian/As. Am.	23	31.43	16.84	38.43	18.22	40.96	22.37	41.91	8.30	.70	1.36
6. Other	7	39.57	13.48	39.43	12.46	42.86	21.54	42.29	6.63	1.00	1.15

*Note:* Native Am. = Native American; Afri. Am/Bl. = African American/Black; Mixed = Parents from two different groups; Hisp./Lat. = Hispanic/Latino(a); Asian/As. Am. = Asian/Asian American; RD = Recent Discrimination; LD = Lifetime Discrimination; AD = Appraised Discrimination; SI = suicide ideation, as measured by the first 5 items of the Beck Suicide Ideation Scale.

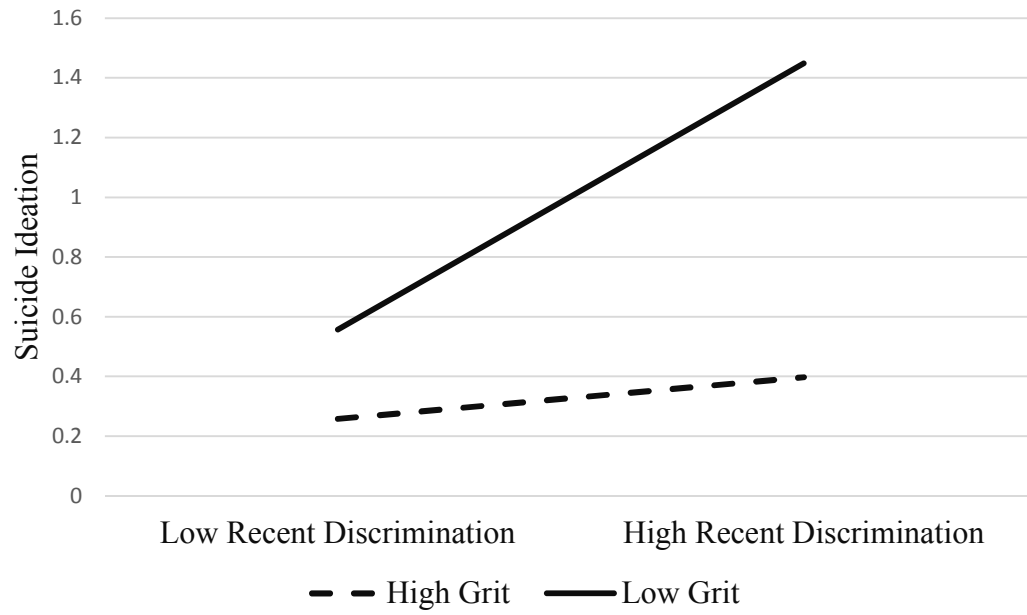
## Appendix B

### **Figures**



Figure 1.

*Grit as a Moderator of the Relationship Between Recent Discrimination and Suicide Ideation*



## Appendix C

### **Oklahoma State University Institutional Review Board Application Approval**

## Oklahoma State University Institutional Review Board

Date: Friday, November 20, 2015  
IRB Application No AS15103  
Proposal Title: Minority status and mental health

Reviewed and  
Processed as: Exempt

**Status Recommended by Reviewer(s): Approved Protocol Expires: 11/19/2018**

Principal  
Investigator(s):

Ashley B Cole	LaRicka R. Wingate
005 North Murray	116 N. Murray
Stillwater, OK 74078	Stillwater, OK 74078

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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, [dawnett.watkins@okstate.edu](mailto:dawnett.watkins@okstate.edu)).

Sincerely,

Hugh Crethar, Chair  
Institutional Review Board

## VITA

Ashley Brooke Cole

Candidate for the Degree of

Doctor of Philosophy

Dissertation: AN EXAMINATION OF GRIT AS A MODERATOR OF THE  
RELATIONSHIP BETWEEN PERCEIVED DISCRIMINATION AND  
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#### Education:

Completed the requirements for the Doctor of Philosophy in Psychology at  
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M., & Hollingsworth, D. W. (2015). The differential impact of brooding and  
reflection on the relationship between perceived stress and suicide ideation.  
*Personality And Individual Differences*, 83, 170-173.  
doi:10.1016/j.paid.2015.04.013

Cole, A. B., Wingate, L. R., Slis, M. L., Tucker, R. P., Hollingsworth, D. W.,  
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